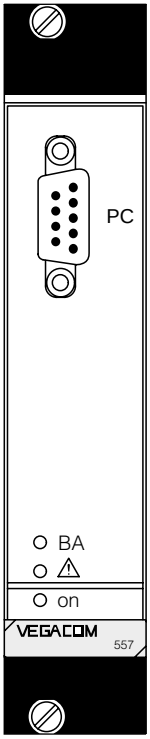
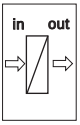
Level and Pressure

Operating Instructions

VEGACOM 557

PC/MODEM - Interface





Contents

Safety information 2

Note Ex-area 2

1 Product description

1.1 Configuration 4

1.2 Functional principle 5

1.3 Function 6

2 Adjustment

2.1 Configuration and parameter adjustment of connected measuring systems 7

2.2 Visualisation 7

2.3 Remote parameter adjustment 7

3 Measuring system with digital communication 8

4 Technical data 9

Safety information

The described module must only be installed and operated as described in these operating instructions. Please note that other action can cause damage for which VEGA does not take responsibility.

Note Ex-area

Please note the approval documents attached (yellow binder), and especially the included safety data sheet.

5 Mounting and installation

5.1 Mounting and connection instructions 12

5.2 Mounting in carrier and housing 13

6 Electrical connection

6.1 Connection instructions 14

6.2 Connection plans 14

7.1 Switch positions on VEGACOM 557 15

7 Parameter adjustment of the interface 15

8 VVO or VV in conjunction with VEGACOM 557 16

9 Set-up

9.1 Set-up-checklist 16

10 Connection examples

10.1 PC on the front interface 17

10.2 Modem on front RS232 - interface 17

1 Product description

With VEGACOM 557 an efficient interface converter is available. It is used for conversion of the VEGA-specific DISBUS and LOGBUS-interface to a RS232C-standard interface. Due to this, measured data and status information of level and pressure measuring systems can be transferred to a PC and visualised there with Visual VEGA (VV). In addition by means of VEGA Visual Operating (VVO) parameter adjustment or configuration of the level and pressure measuring system is possible.

The coupling between VEGACOM 557 and the PC is made directly via the cable on the RS232-interface of VEGACOM 557.
It is possible to provide a connection via modem.

1.1 Configuration

VEGACOM 557 is designed as a component in 19"-technology with 5 TE-width (1 TE = 5,08 mm) acc. to DIN 41 494. It can be used:
- in carrier BGT 596
- in VEGALOG carrier BGT LOG 571
- in housing type 505.

The electrical connection is made via a plug connector acc. to DIN 41 612 on the rear of the component. The connection to the LOGBUS is made via an additional 5-pole plug connection which is mounted to the DIN-plug connector.

A 9-pole SUB-D-plug is located on the front plate of VEGACOM 557.
It is used for connection of a PC via RS 232 C to VEGACOM 557.

The component consists of two boards:
- the basic board
- the additional board.

The additional board is screwed to the basic board.

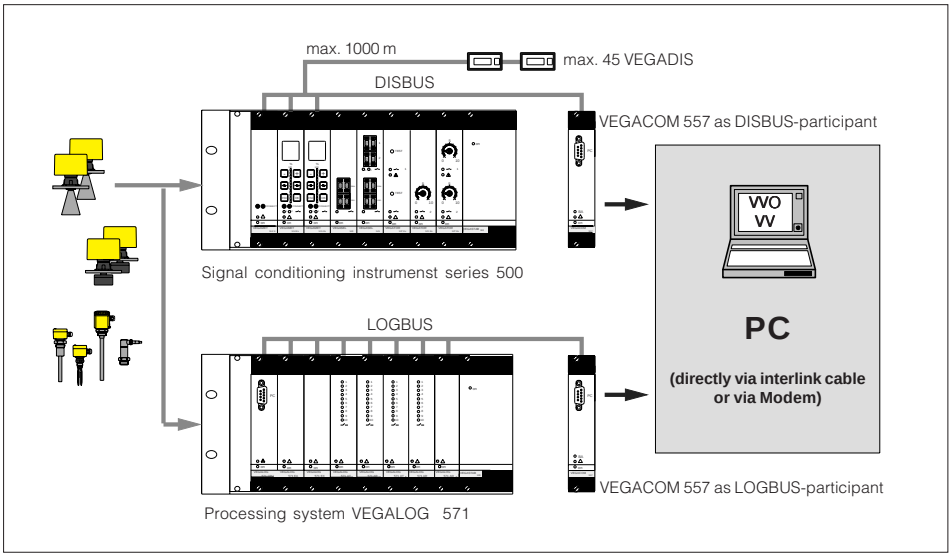
1.2 Functional principle

The gateway VEGACOM 557 can be integrated in two ways in level or pressure measuring systems:
- as DISBUS-participant
- as LOGBUS-participant.

In both cases it is a passive participant.

VEGACOM 557 as DISBUS-participant
VEGAMET series 500 /600 signal conditioning instruments transmit so called PC/PLC-telegrams via the DISBUS measured data and status information. VEGACOM 557 receives as participant on the DISBUS these data. Max. two VEGACOM 557 can be connected to the same DISBUS.

VEGACOM 557 as LOGBUS-participant
There is a permanent data exchange on the LOGBUS between the individual components of the VEGALOG 571. The VEGACOM 557 receives PC/PLC-telegrams containing measured values and status information as a participant of this LOGBUS.



1.3 Function

The data of DISBUS or LOGBUS are firstly written in VEGACOM 557 into a buffer memory.
From this buffer memory the data are read out by means of the Visual VEGA (VV) visualisation software.

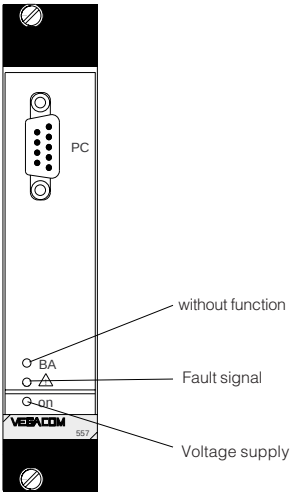
By means of the VEGA Visual Operating, (VVO) parameter adjustment or configuration of connected level and pressure measuring systems is possible.

The communication can be made via a PC or modem to the remote PC (remote parameter adjustment) directly connected to VEGACOM 557.

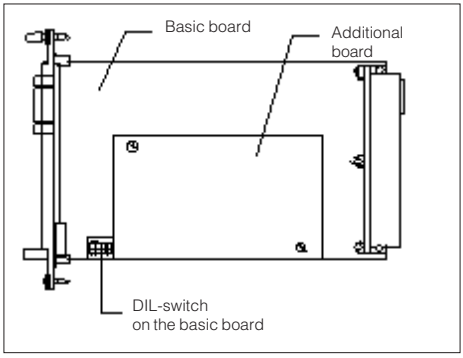
The data communication between VEGACOM 557 and the PC is always initiated by the PC.

2 Adjustment

The indicating elements of VEGACOM 557 are located in the front plate of the component. LEDs are used as indicating elements signalling the operating condition (see page 9).



The adjustment elements are located on the basic board.
A 6-pole DIL-switch block on the basic board is used for adjustment of the front PC-interface.



2.1 Configuration and parameter adjustment of connected measuring systems

An additional function of VEGACOM 557 is the adjustment of the connected measuring system. The adjustment is made via a PC by means of the VEGA Visual Operating (VVO) adjustment software . The PC is connected via an interlink cable to the 9-pole SUB-D-plug in the front plate of VEGACOM 557.

The VEGA-adjustment concept includes the convenient configuration and parameter adjustment of the measuring system or of the sensors with the following instruments:

- VEGAMET series 500/600 signal conditioning instruments
- VEGALOG 571 processing system
- hydrostatic pressure transmitters
- ultrasonic/radar sensors
- capacitive electrodes

The adjustment is menu-guided and window orientated. The procedure is always the same regardless of, whether a radar sensor, several connected signal conditioning instruments or a VEGALOG need to be adjusted via PC.

The configuration of the measuring system comprises, depending on the connected instruments, e.g. the determination of the output functions or the configuration of individual inputs or outputs. The user oriented creation of measurement loops is supported by graphic means, such as for example vessel drawings and pictographs which adapt due to the choice acc. to the actual conditions and options.

Due to the graphic support, complex parameter adjustments such as for example the adjustment of a linearisation curve by means of index markers can also be easily carried out.

2.2 Visualisation

With the VISUAL VEGA (VV) visualisation program measured values of VEGA-processing systems can be shown graphically or in tabular form.

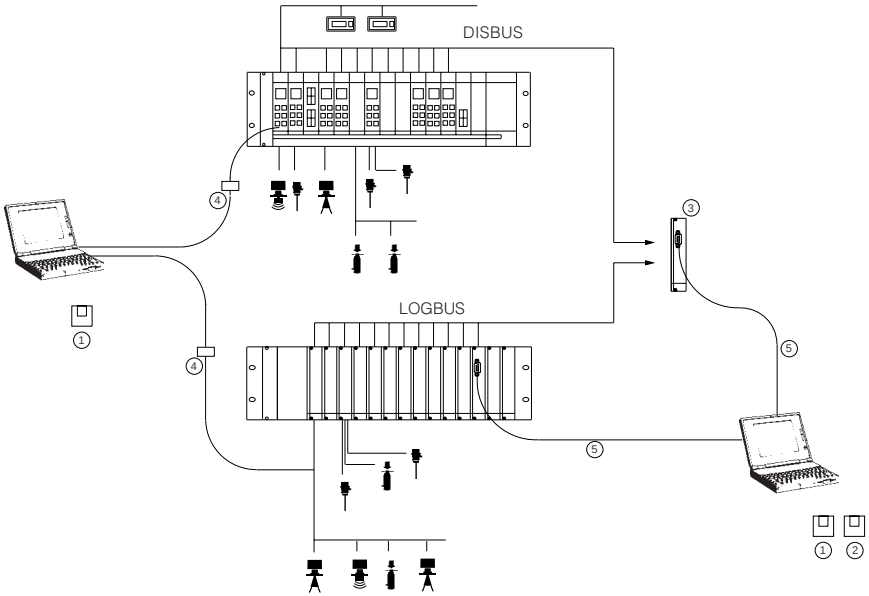
Measured value and status information are transmitted via the interface of VEGACOM 557 or the VEGALOG CPU-card to the PC. For a better survey, these measurement loops can be composed in groups. A direct comparison of several measurement loops is therefore possible. In addition level and fault signals are displayed.

It is also possible to save the measured values on the PC. The cycle and the saving period can be adjusted depending on the requirement. The history data can be displayed graphically or in tabular form. The conversion of the data in ASCII-format ensures the data exchange with other programs.

2.3 Remote parameter adjustment

The PC with the VEGA Visual Operating (VVO) adjustment program can also be used for remote parameter adjustment.
The Visual VEGA (VV) program enables the remote visualisation.
Then do not connect the PC with the RS-232-cable directly to the PC; but via modems and the telephone line. Further information is stated in the operating instructions remote parameter adjustment.

3 Measuring system with digital communication



Explanation:

1 VEGA Visual Operating (VVO)
Adjustment software for the PC for convenient configuration and parameter adjustment of VEGA-instruments
- VEGALOG 571 directly via RS 232-connection cable to CPU-card or VEGACOM 557
- several VEGAMET via VEGACOM 557 or individually via VEGACONNECT
- VEGASON, VEGAPULS via VEGACONNECT to the signal line or on the sensor

2 Visual VEGA (VV)
Visualisation software for the PC for measured value demonstration in graphic or tabular form. Composition of individual measurement loops to groups, saving of fault signals and measured values (recorder function).
Suitable for networks

3 VEGACOM 557
Interface converter for conversion of VEGA-specific protocols in standard formats. Suitable for connection to the DISBUS-output of VEGAMET series 500 / 600 signal conditioning instruments or the LOGBUS of VEGALOG 571 processing system.

4 VEGACONNECT 2
Connection cable (interface converter) between VEGA-instruments (VEGASON, VEGAPULS or VEGAMET) and a PC in conjunction with the VEGA Visual Operating adjustment software.

5 RS 232-connection cable (interlink cable)
Connection cable between PC and VEGALOG 571-CPU or VEGACOM 557

4 Technical data

Power supply	
Operating voltage	U_{nom} = 24 V AC (20 … 53 V), 50/60 Hz or = 24 V DC (20 … 72 V)
Power consumption	approx. 6 VA
Fuse	1 A, slow-blow
Electrical connection	
Component	multiple plug acc. to DIN 41 612, series F 48-pole (d, b, z) with coding holes
Module in carrier BGT 596 or BGT LOG 571	suitable multipoint connector acc. to DIN 41 612 with connection via standard technologies
Housing type 505	via screw terminals max. 1 x 1,5 mm^2
Indicating elements	
LED in front plate	green BA: without function red (flashing): DISBUS/LOGBUS-failure red (flashing irregularly): no PC/PLC-outputs co-ordinated to the measurement loop red (permanently): failure green on: operating voltage on
Meas. data input DISBUS	
Data transmission	DISBUS (digital data transmission)
Connection line	2-wire standard line (screening recommended)
Line length	max. 1000 m
Meas. data input LOGBUS	
Data transmission	LOGBUS (digital data transmission)
Connection line	connection via BUS-plug
PC-interface	
Interface standard	RS 232 C
Line length	max. 15 m
Transmission rate in baud [1)]	300, 600, 1200, 2400, 4800, 9600, 19200, 38400
Transmission format [1)]	8 data bits, 1 Stop bit, no parity or even parity
Plug in the front plate	SUB-D-plug connector, 9-pole, pins

[1)] via DIL-switch adjustable on the basic board

Electrical protective measures

Protection:	
not mounted	IP 00
in carrier BGT 596	
or BGT LOG 571	
- front side completely equipped	IP 40
- upper and lower side	
BGT 596	IP 00
BGT LOG 571	IP 20
- wiring side	IP 00
in housing type 505	
- front side	IP 40
- other sides	IP 30
Protection class	II (in housing type 505)
Overvoltage category	II

Electrical separating measures

Reliable separation acc. to VDE 0106, part 1 between power supply, LOGBUS, DIS-BUS, PC-connection and appropriate interface

- reference voltage	250 V
- test voltage	2 kV

CE-approval, conformity judgement CE

VEGACOM 557 meets the protective regulations of EMVG (89/336/EWG) and NSR (73/23/EWG). The conformity has been judged acc. to the following standards:

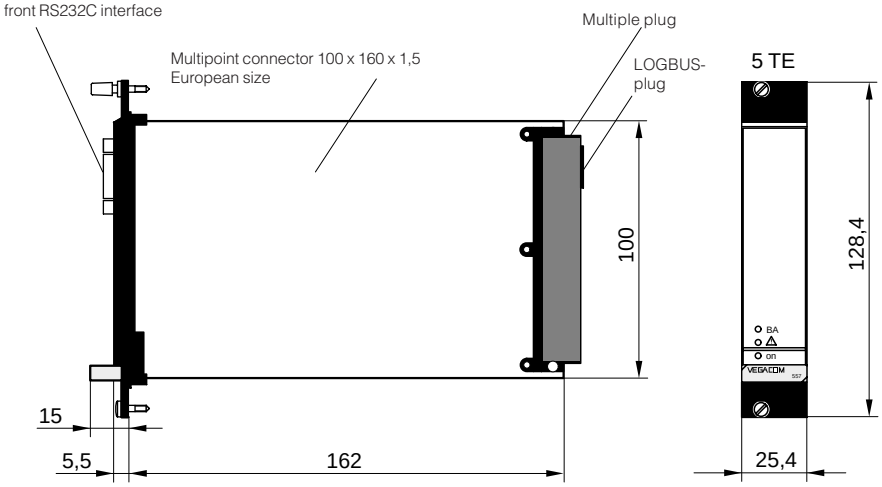
EMVG	Emission	EN 50 081 - 1: 1993
	Susceptibility	EN 50 082 - 2: 1995
NSR		EN 61 010 - 1: 1993

Ambient conditions

Permissible ambient temperature	-20°C ... +60°C
Storage and transport temperature	-20°C ... +85°C
Humidity	93 %, T = 40°C acc. to DIN/IEC 68-2-3
Shock load	2 ... 100 Hz, 0,7 g

Mechanical data

Series	module unit for - carrier BGT 596 - carrier BGT LOG 571 - housing type 505
Dimensions, unassembled	W = 25,4 mm (5 TE), H = 128,4 mm, D = 166 mm
Weight	approx. 550 g


front RS232C interface
Multiple plug
Multipoint connector 100 x 160 x 1,5
European size
LOGBUS-
plug
5 TE
100
128,4
BA
on
VEGACOM
557
15
5,5
162
25,4

5 Mounting and installation

5.1 Mounting and connection instructions

The gateway VEGACOM 557 can receive measured data and status information in two different ways:
- via the DISBUS (from measuring systems with VEGAMET)
- via the LOGBUS (from measuring systems with VEGALOG).

With DISBUS-configurations, VEGACOM 557 can be either mounted in the carrier BGT 596 or into the housing type 505.

In conjunction with the LOGBUS, the VEGACOM 557 is mounted in the carrier BGT LOG 571. The position is individually selectable, the system adjusts automatically (auto configuration).

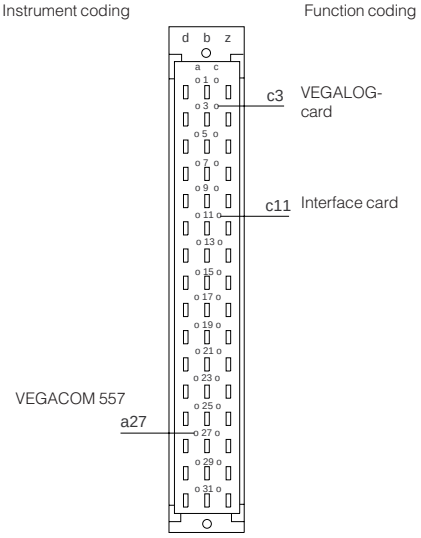
Coding

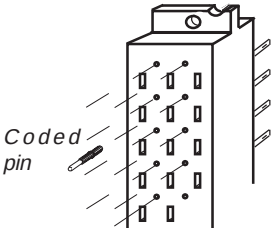
A mechanical coding system avoids interchanging among the different module cards in the carrier or in the housing.

The coding system consists of:
- three coding pins in the multipoint connector
- three holes in the multiple plug of VEGACOM 557.

The coded pins are attached to the module or the housing. The multipoint connector is equipped by the user with the coded pins according to the following table and figure:

	Instrument coding	Function coding
VEGACOM 557	a 27	c3 c11





5.2 Mounting in carrier and housing

BGT 596 or BGT LOG 571

For mounting you just have to place a module in the requested position. A module consists of:

- a multipoint connector acc. to DIN 41 612, series F, 33-pole (d, b, z)
- two screws
- three coded pins
- two guide rails.

The multipoint connector is available as follows:

- Wire-Wrap, standard connection 1,0 mm x 1,0 mm
- plug connection 2,8 mm x 0,8 mm
- Termi-Point standard connection 1,6 mm x 0,8 mm
- soldering connection
- screw terminals 0,5 mm^2.

For mounting the module, please note the operating instructions of the carrier.

Housing type 505

This housing is equipped with a multipoint connector. Before mounting, please check whether or not the housing is provided with a power supply unit.

The connection is made via screw terminals with max. 1,5 mm^2.

6 Electrical connection

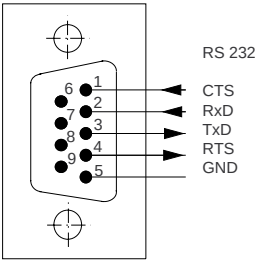
6.1 Connection instructions

You should please note the following instructions for electrical connection:

- the connection must be made according to the appropriate national installation standards (e.g. in Germany acc. to the VDE-regulations).
- the voltage supply of VEGACOM 557 must be made with low voltage to keep protection class II. When using VEGASTAB 593-60 or 593 a reliable separation of mains circuits acc. to DIN/VDE 0106, part 101 is fulfilled.
- secure the connected cables or lines by a strain relief which is available as are accessory from VEGA. The strain relief is also used as earth terminal for screened lines.

6.2 Connection plans

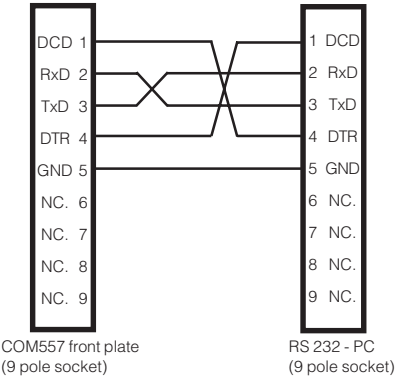
D-SUB-plug (front plate)



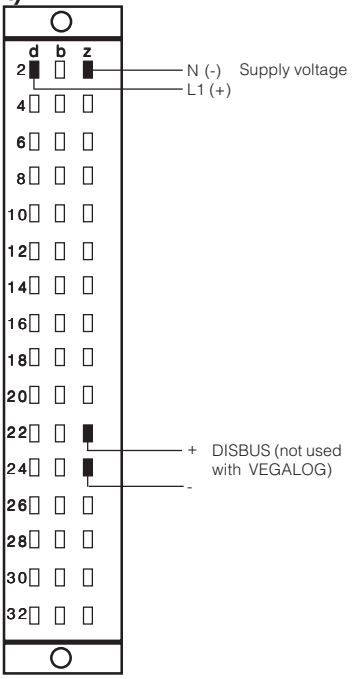
Pin	Description	I/O
1	CTS clear to send	I
2	RxD receive data	I
3	TxD transmit data	O
4	RTS request to send	O
5	GND ground	–

Interface cable PC – VEGACOM

With an RS-232-interface cable (interlink cable) you connect the PC (with the software VVO or VV) with the VEGACOM-card.



Multipoint connector (rear of instrument)



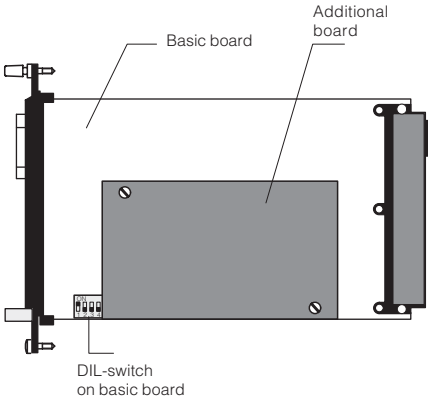
7 Parameter adjustment of the interface

7.1 Switch positions on VEGACOM 557

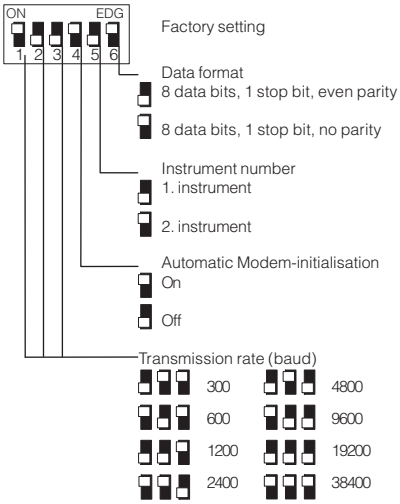
A 6-pole DIL-switch block for adjustment of the RS 232 PC-interface in the front plate is located on the basic board.

Before inserting VEGACOM 557 in the carrier or the housing, the DIL-switches have to be adjusted to the user specific data. The data of this adjustment come in to effect with the next initialisation (voltage on).

Component laterally



DIL-switch basic board



Data format
Parity can be switched over from **even** to **no** parity.
(note for VVO including version 2.15 even parity is absolutely necessary)

Instrument number
Only relevant when operating two VEGACOM 557 on the same DISBUS. If two VEGACOM 557 are operated on DISBUS, different instrument numbers have to be adjusted.
Not relevant for operation on LOGBUS.

Automatic Modem-initialisation
In position "ON“ the modem will be automatically initialised when connecting the modem to the VEGACOM-interface.

Transmission rate
For VVO or VV the transmission rate must be adjusted to 9600 baud.

8 VVO or VV in conjunction with VEGACOM 557

The configuration, parameter adjustment and adjustment of VEGA processing systems can be made with VEGA Visual Operating (VVO).
For the visualisation of measured values the Visual VEGA (VV) software is available.
For the use of VVO or VV a PC is connected with the RS232C-interface of VEGACOM 557.
When this connection is not directly made via a cable, but by means of a modem via a telephone net, this is called remote parameter adjustment.
After having provided the connection via the telephone net, there is no difference between the adjustment e.g. via VVO, and the adjustment when directly connected via cable.
In the further chapters, you find the connection examples either for direct connection of the PC or for the connection via modem.

9 Set-up

9.1 Set-up-checklist

1. Hardware requirements
- VEGACOM 557 version PC / Modem - Interface
- PC directly via interlink cable or via telephone net with modem

2. Software requirements
- VEGA Visual Operating (VVO) or Visual VEGA (VV)

3. Carry out adjustments for RS232-interface of VEGACOM 557
- Adjust Baudrate: DIL-switch basic board
- Adjust parity: DIL-switch basic board
- For modem operation the automatic modem initialisation and no parity have to be activated.

10 Connection examples

The following connections between PC and VEGACOM 557 are possible to enable access to a VEGA processing system from a PC with VVO or VV via a VEGACOM 557.

- PC on the front interface
- Modem on the front interface

10.1 PC on the front interface

In this example a PC is connected via the front interface of VEGACOM 557 with the VEGA processing system.
The front interface is a RS232 C interface.

Procedure:

1. An interlink cable must be used between PC and VEGACOM 557 (s. chapter 6.2)

2. Parameter adjustment must be made for the front interface on VEGACOM 557.

   Interface parameter:
   DIL-switch on basic board (s. page 15)
   For VVO and VV the following parameters have to be adjusted:
   Transmission rate: 9600 Baud
   Data format: 8 data bits, 1 Stopbit, no parity

Note: If two VEGACOM 557s are operated on the same DISBUS, two different instrument numbers must be adjusted with the DIL-switch SW 5 on the basic board. On LOGBUS this switch is meaningless.

10.2 Modem on front RS232 - interface

In this example, a PC is connected via MODEM and the front interface of VEGACOM 557 to the VEGA processing system.
Two analogue modems are applied, in order to use the telephone net for remote parameter adjustment. With ISDN-connection an additional so called terminal adapter (a/b-converter) is required, taking over the adaption of the analogue modem to the ISDN-net.
For further information see the operating instructions "Remote parameter adjustment".

Procedure:

1. Connect modem with the front interface of VEGACOM 557 (use 1:1 cable attached to the modem).

2. The automatic modem initialisation must be activated with VEGACOM 557.
   DIL-switch SW4 on the basic board
   (s. page 15)

3. The parameter adjustment must be made for the front interface on VEGACOM 557.

   DIL-switch on basic board (s. page 15)
   For VVO and VV the following parameters have to be adjusted:
   Transmission rate: 9600 Baud
   Data format: 8 data bits, 1 Stopbit, no parity

Note: If two VEGACOM 557s are operated on the same DISBUS, two different instrument numbers must be adjusted with the DIL-switch SW 5 on the basic board. On LOGBUS this switch is meaningless.

VEGA Grieshaber KG
Am Hohenstein 113
77761 Schiltach/Germany
Phone +49 (0) 7836 50-0
Fax +49 (0) 7836 50-201
E-Mail info@de.vega.com
www.vega.com

The statements on types, application, use and operating conditions of the sensors and processing systems correspond to the actual knowledge at the date of printing.

Technical data subject to alteration.